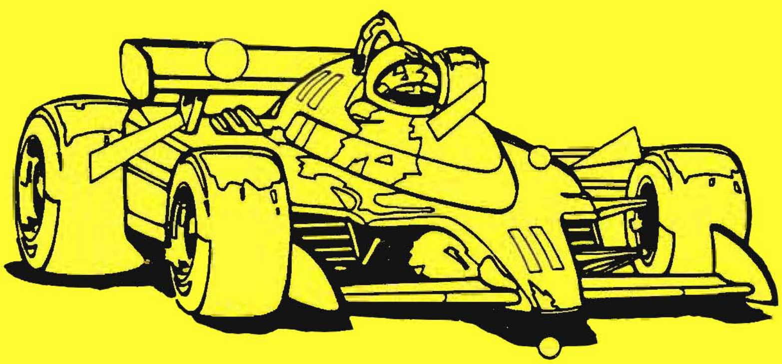
CO-218-09
1st printing

Supplement to

POLE POSITION™*

Operation, Maintenance, and Service Manual (TM-218) and Schematic Package (SP-218)



*Pole Position is engineered and designed by Namco Ltd. Manufactured under license by Atari, Inc. Trademark and © Namco 1982.

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Parts List Changes

NOTE

The metal attraction panel (part no. 039155-01) shown in Figures 1-2, 3-2, and 3-3, is not included in the Sit-Down Cabinet Assembly. This part may be ordered separately. Please contact your Atari representative for further information.

The following part number was changed in the Control Panel Assembly Parts List.

Control Panel Assembly
Parts List

Part No.	*Description*
	Upright and Sit-Down Cabinets
A039229-01	Steering-Wheel Control Assembly (*Namco games use part no. A039229-02)*
A000608-09	Gear-Shifter Control Assembly
72-JB3814S	#8-16 x .87-Inch Screw
75-5512B	#¼-20 x .75-Inch Black Carriage Bolt
005255-04	Shifter Bezel
039154-01	Shifter Spacer
175002-004	#10 Flat Washer
► 177010-244	#¼-20 Hex Locknut

The following part numbers were changed in the Steering-Wheel Control Assembly Parts List.

Steering-Wheel Control Assembly Parts List

Part No.	Description
A035220-02	Coupler Printed-Circuit Board Assembly *(includes Radial Optical Coupler)*
72-8008	#10-32 x 0.50-Inch Steel Socket-Head Cap Screw
72-8012	#10-32 x 0.75-Inch Steel Socket-Head Cap Screw
72-8408	#4-40 x 0.50-Inch Steel Socket-Head Cap Screw
72-HB3606S	#6-32 x 0.38-Inch Zinc-Plated Steel Hex Washer-Head Screw
► 75-040S	#10 Split-Lock Washer
► 75-044S	#4 Split-Lock Washer
75-07014	#4 Flat Washer
79-58356	4-Position Connector with Locking Ramp *(located on the Coupler PCB Assembly)*
030369-01	Radial Optical Coupler *(located on the Coupler PCB Assembly)*
035221-01	100 Ω, ±5%, 1/4 W Resistor *(located on the Coupler PCB Assembly)*
039230-01	Steering Cap
039231-01	Steering Shaft
039232-01	Spacer
039234-01	Steering Frame
039243-01	Steering Cap Label
035938-01	Encoding Wheel
► 040264-01	Encoder Shaft
107013-001	3-in-One® Oil
175002-001	Flat Washer
175002-002	#10 Heavy Flat Washer
► 175009-170	Nylon Flat Washer
178012-001	Retaining Ring for 0.75-Inch Shaft
► 178012-003	Retaining Ring for 0.25-Inch Shaft
178027-001	Nyogel 779® Lubricant
178097-001	Bearing for 0.25-Inch Shaft
178099-003	Steering Wheel
178100-001	Bearing Flange for 0.75-Inch Shaft
178101-001	24 Diametral Pitch x 20° Pressure Angle x 2.500 Pitch Diameter Spur Gear
178101-002	24 Diametral Pitch x 20° Pressure Angle x 0.583 Pitch Diameter Spur Gear
► 178118-001	3/16-inch x 1/4-inch Sleeve Bearing

The following part number was changed in the Printed-Circuit Board Mounting Hardware Parts List.

Printed-Circuit Board Mounting Hardware
Parts List

Part No.	*Description*
	U.S.-Built Upright and Sit-Down Cabinets
A037701-01	Electromagnetic Interference (EMI) Cage *(includes guides)*
72-1404F	#4-40 x ¼-inch Cross-Recessed Steel Screw
72-1604F	#6-32 x ¼-inch Cross-Recessed Steel Screw
► 034536-03	Foam Pad

The following part numbers were changed in the CPU PCB Assembly Parts List.

Central Processing Unit Printed-Circuit Board Assembly
Parts List

Designator	*Description*	*Part No.*
	Capacitors	
C10	0.1 μF, ±10%, 25 V Ceramic-Disc Axial-Lead Capacitor	122002-104
► C11	47 μF, 16 V Aluminum Electrolytic Fixed Axial-Lead Capacitor	24-160476
C12	0.1 μF, ±10%, 25 V Ceramic-Disc Axial-Lead Capacitor	122002-104
C13	0.01 μF, +80%, -20%, 25 V Ceramic-Disc Axial-Lead Capacitor	122005-103
C14, C15	0.1 μF, ±10%, 25 V Ceramic-Disc Axial-Lead Capacitor	122002-104
C16–C23	0.01 μF, +80%, -20%, 25 V Ceramic-Disc Axial-Lead Capacitor	122005-103
C24, C25	0.1 μF, ±10%, 25 V Ceramic-Disc Axial-Lead Capacitor	122002-104
► C26	47 μF, 16 V Aluminum Electrolytic Fixed Axial-Lead Capacitor	24-160476
C39, C40	0.01 μF, 100 V Radial-Lead Mylar Capacitor	21-101103
► C41	47 μF, 16 V Aluminum Electrolytic Fixed Axial-Lead Capacitor	24-160476
C42, C43	0.0047 μF, 100 V Radial-Lead Mylar Capacitor	21-101472
C44, C45	0.001 μF, 100 V Radial-Lead Mylar Capacitor	21-101102
C46	470 μF, 16 V Aluminum Electrolytic Fixed Axial-Lead Capacitor	24-250477
► C47–C56	22 μF, 35 V Aluminum Electrolytic Fixed Axial-Lead Capacitor	24-350226
C57–C88	0.1 μF, ±10%, 25 V Ceramic-Disc Axial-Lead Capacitor	122002-104
► C82	0.001 μF, 100 V Radial-Lead Mylar Capacitor	21-101102

	Integrated Circuits	
2N	Type-12L6 Programmable-Array Logic 1	137316-001
3A	Type-Z8002 16-Bit Microprocessor	137275-001
3C	Type-74LS373 Integrated Circuit	37-74LS373
3F, 3H	Custom Integrated Circuit 10	137281-001
5A	Type-74LS74 Integrated Circuit	37-74LS74
5C	Type-12L6 Programmable-Array Logic 1	137316-001
8M	Type-74S04 Integrated Circuit	37-74S04
	Resistors	
R49	220 Ω, ±5%, ¼ W Resistor	110000-221
R50	1 kΩ, ±5%, ¼ W Resistor	110000-102
R51	220 Ω, ±5%, ¼ W Resistor	110000-221
R52	470 Ω, ±5%, ¼ W Resistor	110000-471
R89	100 kΩ, ±5%, ¼ W Resistor	110000-104
R90–R92	1 kΩ, ±5%, ¼ W Resistor	110000-102
R98	4.7 kΩ, ±5%, ¼ W Resistor	110000-472
R99	220 Ω, ±5%, ¼ W Resistor	110000-221

The following part numbers were changed in the Video PCB Assembly Part list.

Video Printed-Circuit Board Assembly Parts List

Designator	Description	Part No.
	Capacitors	
► C3–C17	22 μF, 35 V Aluminum Electrolytic Axial-Lead Capacitor	24-350226
	Resistors	
R62	2.2 kΩ, ±5%, ¼ W Resistor	110000-222
► R63	1 kΩ, ±5%, ¼ W Resistor	110000-102
► R64, R65	82 Ω, ±5%, ¼ W Resistor	110000-820
R66	220 Ω, ±5%, ¼ W Resistor	110000-221
R67	470 Ω, ±5%, ¼ W Resistor	110000-471
R68	1 kΩ, ±5%, ¼ W Resistor	110000-102
R69	2.2 kΩ, ±5%, ¼ W Resistor	110000-222
► R70	1 kΩ, ±5%, ¼ W Resistor	110000-102
► R71, R72	82 Ω, ±5%, ¼ W Resistor	110000-820
R73	220 Ω, ±5%, ¼ W Resistor	110000-221
R74	470 Ω, ±5%, ¼ W Resistor	110000-471
R75	1 kΩ, ±5%, ¼ W Resistor	110000-102
R76	2.2 kΩ, ±5%, ¼ W Resistor	110000-222
R77	1 kΩ, ±5%, ¼ W Resistor	110000-102
► R78, R79	82 Ω, ±5%, ¼ W Resistor	110000-820
	Transistors	
► Q1–Q4	Type-2N3904, 60 V, 1 W, NPN Transistor	34-2N3904
► Q5–Q7	Type-2N3706, 40 V, 1 W, PNP Transistor	33-2N3906

The following part numbers were changed in the Foot-Pedal Control Assembly Parts List.

Foot-Pedal Control Assembly
Parts List

Part No.	Description
	Upright and Sit-Down Cabinets
► 19-9026	5 kΩ Potentiometer *Acceptable substitute is part no. 19-9022*
72-8606	#6-32 x .38-Inch Hex Socket-Head Cap Screw
040028-01	Compression Spring *(for pedal)*
► 177010-240	#10-24 Hex Locknut

The following part number was changed in the Utility Panel Assembly Parts List.

Utility Panel Assembly
Parts List

Part No.	Description
176018-002	#6-32 x ½-Inch Thread-Forming Screw
75-9910W0	#$^{15}/_{32}$-32 Stamped Nut
178070-001	Volume Control Knob
► 179125-001	Grounding Clip

Illustration Changes

Please note the changes made to the Steering-Wheel Control Assembly illustration which are indicated by this symbol:

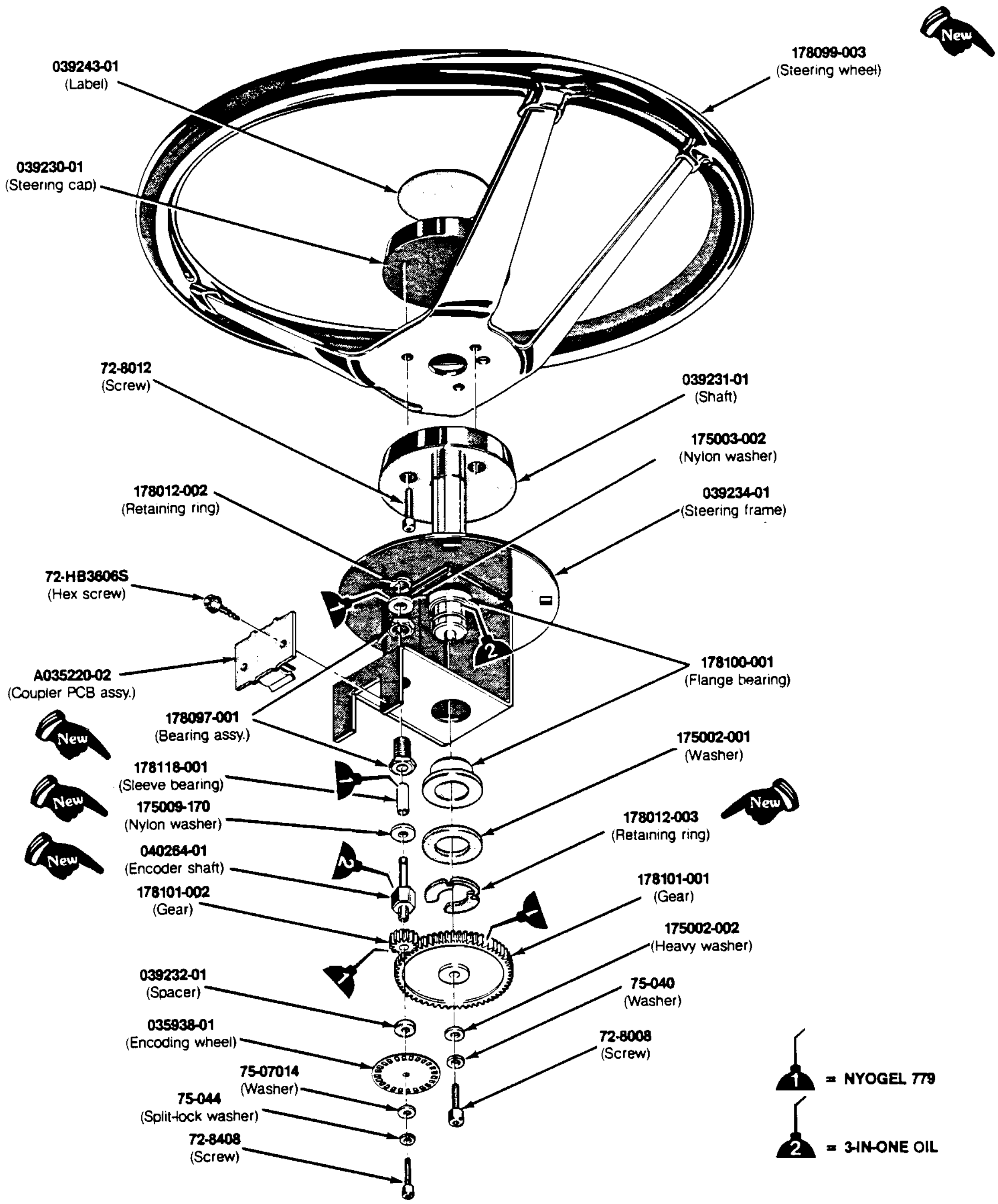


Figure 3-5 Steering-Wheel Control Assembly
U.S.-Built A039229-01 E
Ireland-Built A039229-02 E

Figure 3-4: Part no. 75-945S (Hex locknut) changed to 177010-244.

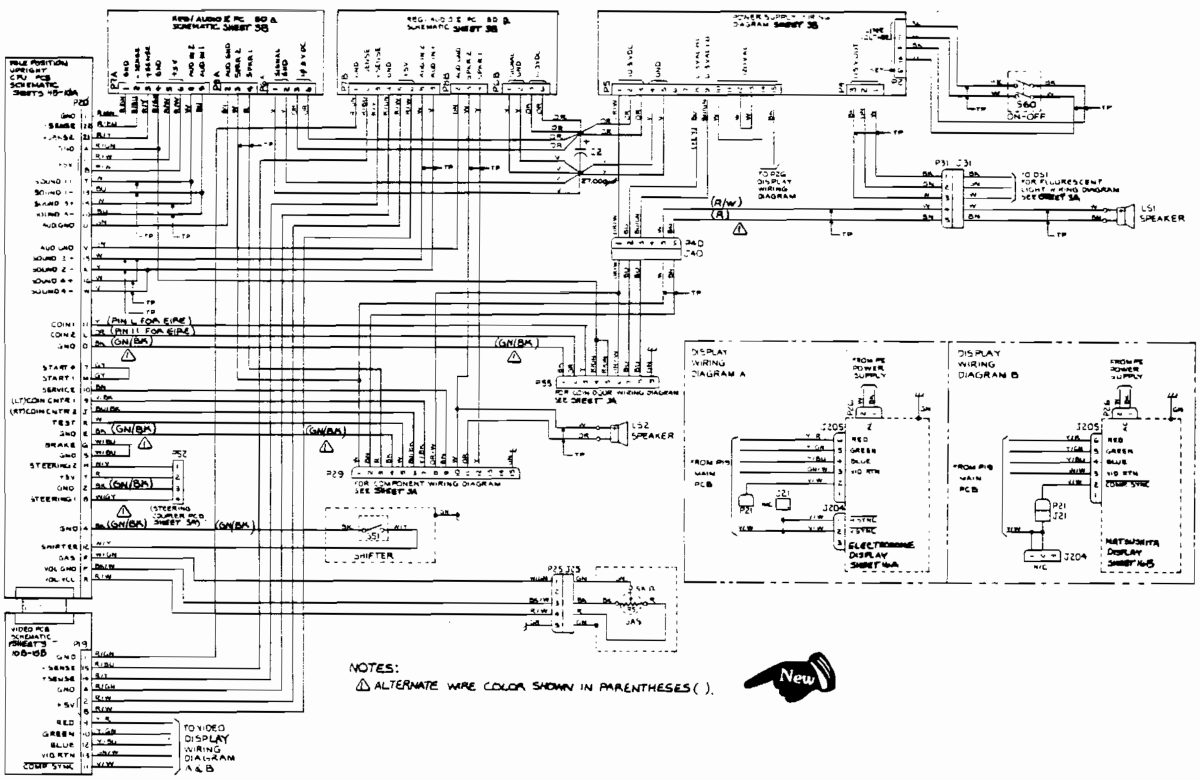
Figure 3-9: Part no. 75-941S (Hex locknut) changed to 177010-240.

Figure 3-15: Part no. 75-916S (Hex nut) has been replaced by part no. 179125-001 (Grounding clip).

Figure 3-18: Part no. 034536-02 (Foam pad) changed to 034536-03.

Schematic Changes

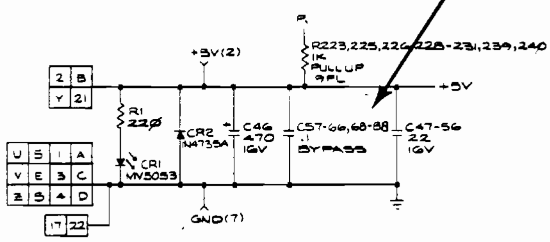
Sheet 1B



Sheet 4B

C85-C88 have been added.

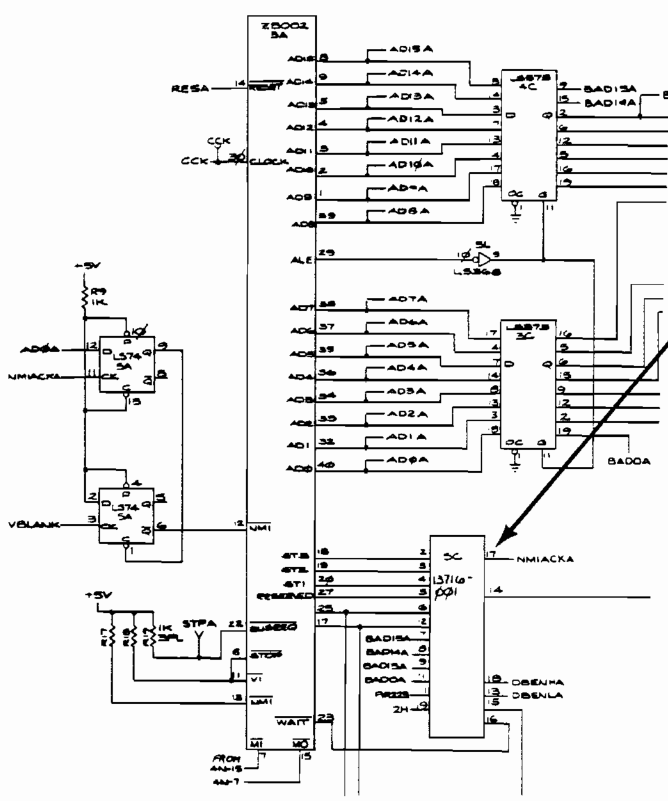
CPU PCB Power Input



Sheet 5A

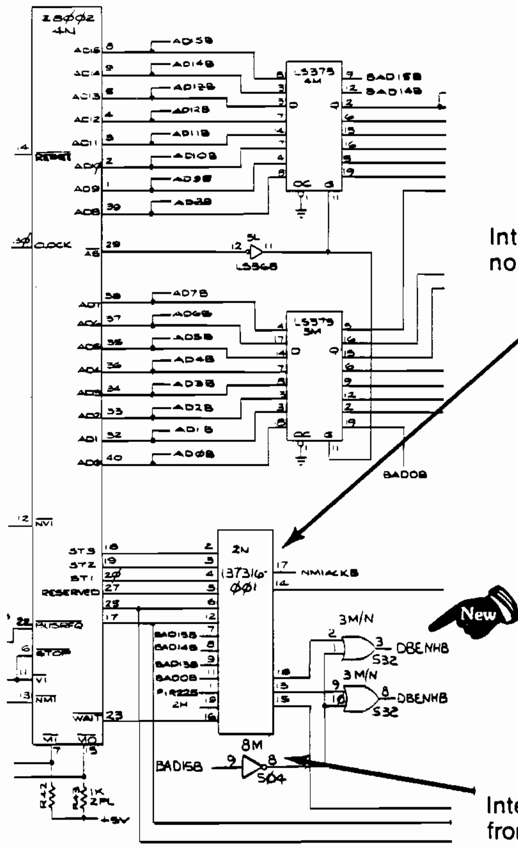
Microprocessor A

Integrated Circuit 5C part no. changed to 13716-001.



Sheet 5B

Microprocessor B

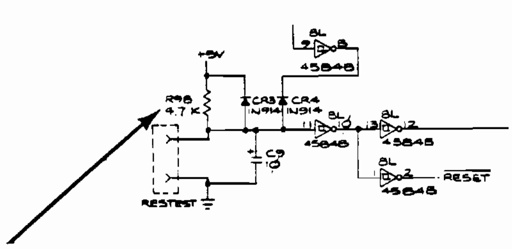


Integrated Circuit 2N part no. changed to 13716-001.

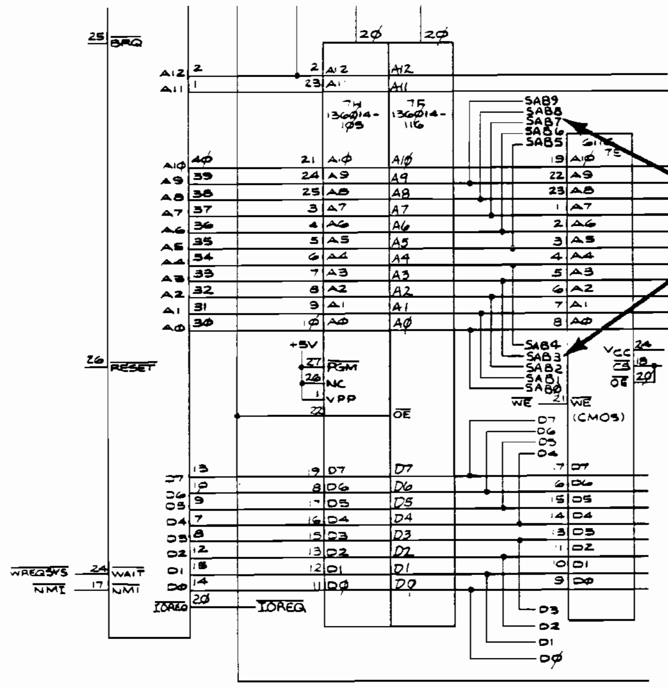
Integrated Circuit 8M changed from LS04 to S04.

Sheet 6A

Sound Microprocessor



R98 changed from 2.2 kΩ to 4.7 kΩ.

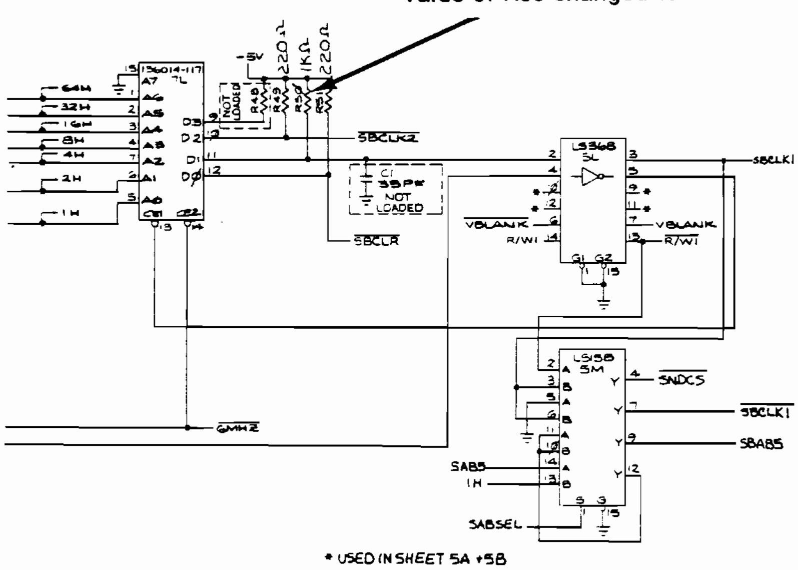


Signal names SBAB0-SBAB9 changed to SAB0-SAB9.

Sheet 7A

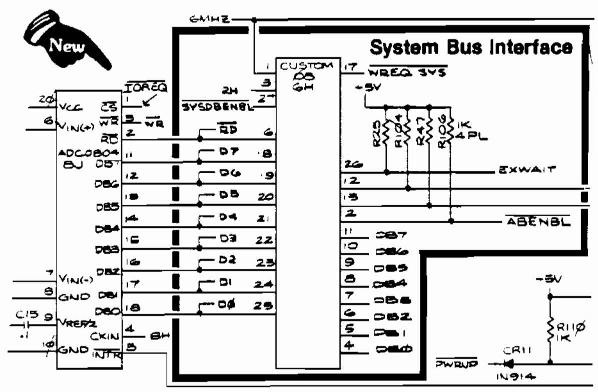
CPU PCB Sync Chain

Value of R50 changed to 1 kΩ.



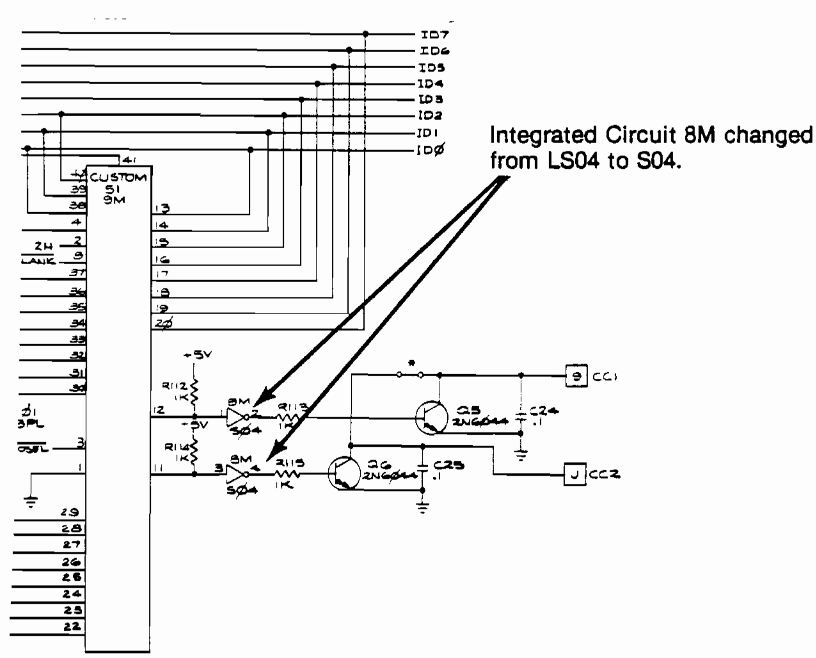
Sheet 8A

Brake and Gas Pedal Input

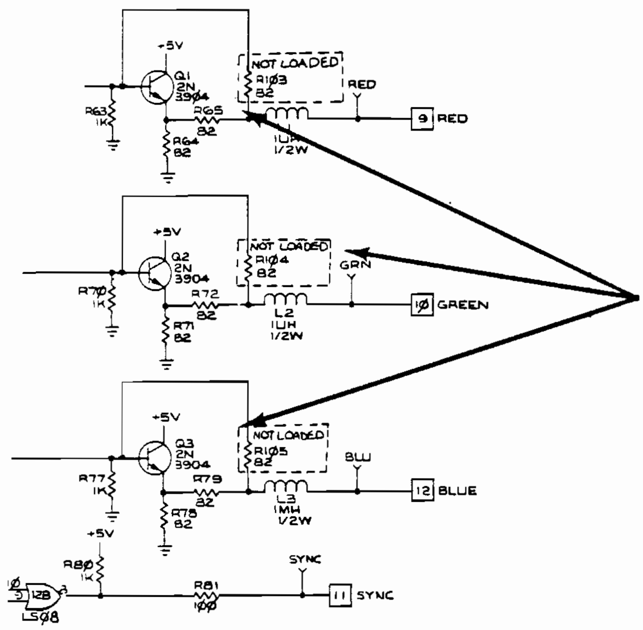


Sheet 8B

Option Switch Input and I/O Interface



Color Memory and Output



Transistors Q1-Q3 have been added.

Resistors R63, R70 & R77 have been added.

Resistors R103-R105 are not loaded.